

**IN THE CLAIMS**

Please amend the claims as indicated:

- 1 1. (currently amended) A rotatable downhole assembly adapted for conveying in a  
2 borehole and determining a parameter of interest of a medium proximate to the  
3 borehole, the downhole assembly comprising:
  - 4 (a) a navigation assembly ~~for providing which provides~~ a measurement  
5 indicative of toolface angle of the downhole assembly, said navigation  
6 assembly associated with a first processor;
  - 7 (b) a directional evaluation device ~~for providing which provides~~  
8 measurements indicative of the parameter of interest, said directional  
9 evaluation device associated with a second processor; and
  - 10 (c) a common bus operatively connected to the first processor and the second  
11 processor.
- 12
- 1 2. (previously presented) The rotatable downhole assembly of claim 1 wherein navigation  
2 assembly further provides an indication of a location of the downhole assembly.  
3
- 1 3. (original) The rotatable downhole assembly of claim 1 wherein said directional  
2 evaluation device further comprises a formation evaluation device.  
3
- 1 4. (previously presented) The rotatable downhole assembly of claim 1 wherein said

2 navigation assembly is conveyed one of (A) a drillstring, (B) a coiled tubing, and,  
3 (C) a wireline.

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1 5. (previously presented) The rotatable downhole assembly of claim 1 wherein said  
2 navigation assembly is on a first housing and said directional evaluation device is  
3 on a second housing, said first and second housing encircling a drive shaft, said  
4 drive shaft having with a mud motor at a first end and a drilling device at a second  
5 end.

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1 6. (original) The rotatable downhole assembly of claim 1 wherein said navigation  
2 assembly comprises a gyroscope selected from (A) a two-axis gyroscope and, (B)  
3 a three-axis gyroscope.

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1 7. (original) The rotatable downhole assembly of claim 1 wherein said navigation  
2 assembly comprises a three-component magnetometer.

3

1 8. (previously presented) The rotatable downhole assembly of claim 1 wherein:  
2 (I) said first processor processes signals from said navigation assembly, while  
3 the rotatable downhole assembly is being rotated, to provide a value of an  
4 instantaneous tool face angle, said value being communicated on the  
5 common bus at specified intervals, and;  
6 (II) wherein said second processor processes signals from the directional

7 evaluation device, while the downhole assembly is being rotated, and  
8 provides a signal indicative of the parameter of interest, said signal being  
9 communicated on the common bus at specified intervals.

10

1 9. (previously presented) The rotatable downhole assembly of claim 8 further comprising  
2 at least one of (A) a telemetry device for transmitting information about the  
3 parameter of interest to an uphole device, and, (B) a memory for storing values of  
4 the instantaneous tool face angle and signal indicative of the parameter of  
5 interest.

6

1 10. (original) The rotatable downhole assembly of claim 8 wherein said processing of  
2 signals from the first sensing device by the first processor is independent of said  
3 processing of signals from the directional evaluation device by the second  
4 processor.

5

1 11. (original) The rotatable downhole assembly of claim 10 wherein said first and second  
2 processors are spaced apart.

3

1 12. (original) The rotatable downhole assembly of claim 10 wherein said first and second  
2 processors are not spaced apart.

3

1 13. (previously presented )The rotatable downhole assembly of claim 3 wherein said

2       directional evaluation device further comprises at least one of (I) at least one  
3       gamma ray, (II) a resistivity device, (III) a density logging device.

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1       14. (original) The rotatable downhole assembly of claim 13 wherein said at least one  
2       gamma ray detector further comprises a pair of gamma ray detectors on opposite  
3       sides of the rotatable downhole assembly.

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1       15. (currently amended) The rotatable downhole assembly of claim 10 further comprising  
2       a processor for synchronizing which synchronizes said value of the tool face angle  
3       with the signal indicative of the parameter of interest.

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1       16. (previously presented) The rotatable downhole assembly of claim 15 further  
2       comprising at least one of (A) a telemetry device for transmitting information  
3       about the parameter of interest to an uphole device, and, (B) a memory for storing  
4       values of the instantaneous tool face angle and signal indicative of the parameter  
5       of interest.

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1       17. (currently amended) The rotatable downhole assembly of claim 15 wherein said  
2       processor for synchronizing which synchronizes is one of the first processor and  
3       the second processor.

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1       18. (currently amended) A method of determining a parameter of interest of a medium

2 proximate to a borehole using a rotating assembly in said borehole, the method  
3 comprising:  
4 (a) obtaining information about a tool-face angle of the assembly during  
5 rotation thereof;  
6 (b) using a directionally sensitive evaluation device for obtaining  
7 measurements indicative of the parameter of interest, said measurements  
8 being obtained separately over a plurality of specified time intervals; and  
9 (c) ~~using at least one processor for determining from said obtained~~  
10 information and said measurements of the directionally sensitive  
11 evaluation device, partially processed measurements indicative of the  
12 parameter of interest over a plurality of sectors of said tool face angle; ~~and~~  
13 (d) approximating said partially processed measurements by a series  
14 expansion that includes a sinusoidal variation with said tool face angle.  
15

1 19. (original) The method of claim 18 wherein obtaining said information about said tool  
2 face angle further comprises:  
3 (i) using a navigation assembly including a first sensing device that is at least  
4 one of (A) a gyroscope, (B) a magnetometer, and, (C) an accelerometer,  
5 for providing a measurement indicative of said toolface angle; and  
6 (ii) using a processor associated with the navigation assembly for determining  
7 said toolface angle over said time intervals.  
8

1 20. (previously presented) The method of claim 19 wherein said rotating assembly  
2 further comprises a drill bit for penetrating a formation, the method further  
3 comprising using at least one of (I) said gyroscope, and, (II) an accelerometer, for  
4 determining a rate of penetration (ROP) of said downhole assembly.

5

1 21. **canceled.**

2

1 22. (currently amended) The method of claim 21 18 wherein said series expansion further  
2 includes a sinusoidal variation of twice said tool face angle.

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1 23. (previously presented) The method of claim 18 wherein said directionally sensitive  
2 evaluation device further comprises at least one nuclear sensor.

3

1 24. (previously presented) The method of claim 23 wherein the at least one nuclear  
2 sensor further comprises a pair of nuclear sensors on substantially opposite sides  
3 of the downhole assembly.

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1 25. (previously presented )The method of claim 23 further comprising using a drill bit  
2 coupled to the downhole assembly for penetrating a formation and using  
3 measurements from said at least one nuclear sensor for determining a relative  
4 inclination of the borehole to a formation boundary.

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1 26. (previously presented) The method of claim 24 further comprising using a drill bit  
2 coupled to the downhole assembly for penetrating a formation and using  
3 measurements from said pair of nuclear sensors for determining a relative  
4 inclination of the borehole to a formation boundary.

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1 27. (previously presented) The method of claim 18 wherein said directionally sensitive  
2 evaluation device comprises a resistivity device.

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1 28. (previously presented) The method of claim 18 wherein said directionally  
2 sensitive evaluation device comprises a density measurement device.

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1 29. (original) The method of claim 21 further comprising using a processor for  
2 determining from said series expansion an indication of proximity to a bed  
3 boundary in the subsurface formation.

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1 30. (previously presented) A method of obtaining a processed image of a borehole in an  
2 earth formation using a rotating downhole assembly in said borehole, the method  
3 comprising:

4 (a) obtaining information about a tool-face angle of the assembly during  
5 rotation thereof;  
6 (b) using a directionally sensitive evaluation device for obtaining  
7 measurements indicative of a property of said earth formation at a

1 31. (previously presented) The method of claim 30 wherein said fitting function further  
2 comprises a sinusoidal function.

1 32. (original) The method of claim 30 further comprising determining contours of an  
2 equal value of said fully processed data set.

1 33. (previously presented) The rotatable downhole assembly of claim 1 wherein said  
2 navigation assembly includes at least one of (i) a gyroscope, (ii) a magnetometer,  
3 and, (iii) an accelerometer

1 34. (previously presented) The method of claim 23 wherein said at least one nuclear  
2 sensor comprises a gamma ray sensor.